THE INDUCTION OF SLEEP

AND

INSENSIBILITY TO PAIN,

BY

JOHN M. CROMBIE, M.A., M.D.

"Dr. Crombie's Chloroform Apparatus (*manufactured by S. Maw, Son and Thompson*).—This instrument, of which we appeud a woodcut, is a very ingenious and useful invention. The object of the inventor has been to make it possible for persons suffering from intense pain or insomnia to avail themselves of the benefits of those smaller doses ('stimulant' doses, we should call them) of chloroform, which will produce sleep without producing coma. It is notorious that an immense number of sick persons are in the habit of using chloroform with this intention, but that they usually take it by means of a simple handkerchief or lint, which, at any rate for self-administration, is a most dangerous method, and is already known to have caused several deaths, and suspected to have caused many others. In Dr. Crombie's instrument there is no danger of any untoward accident. The patient, lying comfortably on a sofa, or in bed, places the vessel containing the chloroform (the cap well screwed ou) beside him, and puts the conical facepiece over his nose and mouth. He then proceeds to work the hand-ball with regular rhythm. This projects an exceedingly small quantity of chloroform at each jet, on the blotting-paper in the case. Very soon a feeling of drowsiness comes over the patient, which renders it impossible for him to keep up the pumping movement, and he quickly drops off to sleep without the possibility of giving himself an overdose. We understand that this inhaler has been largely used for cancer patients, and other sufferers from painful incurable diseases, with great benefit. It certainly affords the only means we know of by which chloroform can safely be administered to themselves by patients."—From *The Practitioner*, April, 1873.

"Chloroform has indeed, but more clumsily and less safely, been adopted by practitioners since its introduction for this purpose; but it has always most properly been placed in patients' hands with dread and misgiving, and the results have been in several cases disastrous; and no doubt the full therapeutic value of many anæsthetics for the relief of pain has not been taken advantage of for this reason. Dr. Crombie's clever mechanical contrivance recommends itself for fair trial under the surveillance of the medical practitioner."—*The London Medical Record*, May 28, 1873.

"Dr. Crombie's Apparatus appears to be a good one, and to offer increased

facilities for the safe application of slight anæsthesia for the relief of pain. We have employed it in suitable cases, and it has acted well."—*British Medical Journal*, June 14, 1873.

"Dr. Crombie's ingenious little instrument for the production of sleep and insensibility to pain—such as neuralgia, and the like—by the inhalation of anæsthetics, is now well known. The great value which he claims for it is, that by its means the use of the anæsthetic may safely be left in the hands of sufferers themselves. . . . . Dr. Crombie's pamphlet contains some general remarks on anæsthetics which are good in themselves, and which are expressed in accurate and elegant English."—*Westminster Review*, October, 1873.

"Dr. Crombie remarks that when all the conditions favouring sleep are observed —that is, when the patient is in a bed, comfortably warm, and excluded from noise and too much light, and wearily longing for sleep, even although suffering great pain—an incredibly small quantity of chloroform is sufficient to produce it. The accidents which have occurred through the administration of chloroform seem to have been due to the administration of the drug in excess, and attempting to produce total unconsciousness—an unnecessary proceeding, as it is not needful to reduce the vitality so low in order to induce insensibility to pain. The following passage, which is also of much general interest, gives the result of Dr. Crombie's observations on this point," &c.—*Iron*, March 21, 1874.

"Everyone who has had the misfortune to suffer from the want of sleep will, we are certain, fully appreciate the information which this able and interesting essay contains. The subject which the author, Dr. Crombie, has endeavoured to elucidate and render intelligible to the plainest capacity is one of great importance, and it is, moreover, one wherein the rich as well as the poor, the young as well as the old, are equally concerned, since all of us are liable at any time to be attacked by illness or exposed to personal injuries, whether of a serious or modified character. . . . There are many other points which we should have wished to bring under the notice of our readers; but they must be content for the present with what they have already got—strongly recommending them, however, to study the essay carefully for themselves. They will find much to recommend the judicious administration of chloroform in all cases where insensibility to pain is required."—*The Reporter*, July 11, 1874.

"The method of administration and the degree of anæsthesia produced is provided for by an ingeniously-constructed apparatus, devised by Dr. Crombie, which is, so to speak, automatic in its action. . . . In view of the growing consumption of chloral-hydrate, and the rather numerous accidents from its use, it would be well if more attention were paid by the public to the arguments of Dr. Crombie."—*World of Science*, December 4th, 1874.

INSTRUCTIONS AND RULES

FOR THE USE OF

THE ADMINISTRATOR.

Unconsciousness to the extent of *sleep*, as distinguished from *coma*, is all that can be produced by this method for the self-administration of anæsthetics.* This is all that is necessary for relief from pain, however severe; it is all that can be reached and sustained with safety. The sleep thus induced, just as sleep when it occurs spontaneously, does not imply the total suspension of all susceptibility to impressions, but is that degree of unconsciousness in which the susceptibility is so diminished that, what otherwise would be acute suffering or violent pain, can at most be felt only as a feeble or momentary experience, and consequently does not awaken the sleeper at the time, nor recur to his recollection afterwards. *Coma*, on the other hand, is an entire suspension of all susceptibility to impressions—a condition immediately bordering on death.

It is possible to attain *sleep*, and impossible to produce *coma* by this method, for the following reason:—*the inhalation of the vapour ceases whenever the patient begins to sleep*, and this because it is dependent on certain movements of the hand, which are arrested by the approach of sleep.

The anæsthetic sleep is dangerous, like natural sleep, in advanced diseases of the heart, lungs, or brain. Persons suffering from such diseases are always in danger, when asleep, of sleep passing into coma and death, and if they had recourse to anæsthetics, would increase that tendency. But, with those exceptions, sleep induced by chloroform or ether is not attended with danger.

The bottle is to be half-filled with the anæsthetic, the stopper screwed tightly down, and the point of the delivery tube fixed in the inhaler.† A piece of blotting-paper or a small quantity of cotton-wool in front of the delivery tube inside the inhaler prevents the anæsthetic from reaching the patient directly. The inhaler is placed over the mouth and nostrils, about two or three inches distant from them, and at each compression of the ball three or four minims are ejected into it. Two or three compressions per minute suffice to maintain the air inhaled, especially with chloroform, sufficiently charged; but the rate of compression is to be guided by the capacity of the patient for respiring the vapour, always taking care that the mouth and nostrils are so placed as to inspire what is being pumped into the inhaler, and, conversely, that none of the anæsthetics is to be pumped out while the mouth and nostrils are turned from the inhaler.

Perfect quietness must be enjoined on attendants, if any, and patients should compose themselves as in preparing for sleep ordinarily, so as to assist the action of the anæsthetic, and must not be interfered with during the process.

When sleep supervenes, the ball of the instrument is let go, just as the plaything drops from the hand of the sleeping child.

The safety of the instrument for use as directed depends entirely on the accuracy of the mechanical adjustments, and therefore none will be sold but those examined and approved by the inventor.

Messrs. S. Maw, Son & Thompson are the sole authorised manufacturers.

JOHN M. CROMBIE, M.A., M.D.

Brompton, March, 1873.

---

* Chloroform, Ether, Bichloride of Methyline.

† When the small opening in the air-tube is covered by the slide, the maximum quantity of anæsthetic is ejected; when it is left free, the minimum.

By the same Author.

A NEW AND EASY METHOD

FOR THE

SUB-CUTANEOUS APPLICATION OF MORPHIA.

"The author has a high estimate of the local use of morphia, and believes that many medical men are prevented from using such means by the expense of the syringe, its frequently needing repair, and that patients object to the pain its causes. . . . Theoretically the plan recommended is ingenious and excellent."—*Edinburgh Medical Journal*, December, 1873.

"The mode snggested is a desirable one to know, as there are many circumstances of emergency in which it might be useful."—*Hospital Gazette.*

MACKEY'S ABSORBENT PAPER.

(REGISTERED,)

A DRESSING for SUPPURATING WOUNDS and ULCERS of all kinds,

AS RECOMMENDED BY DR. CROMBIE.

The special advantages of this preparation as a dressing for suppurating wounds and ulcers of all kinds are the following :—

1st. It sucks up from the discharging surface the thin acrid secretion which, by destroying the surrounding tissues, is the active agent in enlarging the wound when it is allowed to remain for any time in contact with the parts. Ordinary lint is a very imperfect absorbent, and hence keeps the discharge in contact with the surface instead of removing it.

2nd. It is a very clean and inexpensive dressing.

3rd. It can be employed in any degree of tenuity, and consequently is much lighter on the surface of sensitive sores than lint of any description.

4th. It can always be removed from the wound without breaking down granulations, or causing bleeding or pain, because it has little tendency to adhere; and when adhesion does take place, it is easily overcome by simply soaking the paper with a little water.

*The paper requires to be slightly wetted in water before application.**

MACKEY'S

MEDICATED ABSORBENT FLOCKS.

(REGISTERED.)

The above, medicated in a solution of carbolic acid and chlorate of potash, constituting a valuable disinfectant for specific and contagious ulcers—syphilitic, lupoid, and cancerous; the *modus operandi* being the removal from the surface of the various discharges, and their disinfection in the substance of the absorbent. This variety is highly recommended for the absorption of uterine discharges, &c.

PREPARED ONLY BY

J. B. MACKEY, 1 and 2, Bouverie Street, Fleet Street,

LONDON, E.C.

---

* See *Medical Times and Gazette*, February 8, 1873.

SPIRAL-ELASTIC HEAD BANDAGE FOR HEADACHE.

(To the Editor of *The Lancet*.)

SIR,

The relief obtained from pressure in certain forms of headache is well-known matter of fact in domestic as well as professional circles; the handkerchief bound round the temples having historical fame as a comforter for the aching head. Messrs. HOOPER, of Pall Mall, at my suggestion, have constructed a head-bandage of their excellent spiral-elastic fabric, which is worn with much more benefit and comfort than the handkerchief. From the nature of the material, as in the stocking and abdominal bandage, the pressure is equally distributed round the head, remains always of the same tension, and is not displaced by any movement of the head. Those who suffer from headache induced by afflux of blood, as from fits of coughing or other causes producing congestion and excessive pulsation of the temporal vessels, will derive great benefit from the support and pressure thus supplied; indeed, the painful sense of bursting and fulness which more or less accompanies headache of every kind can be thereby greatly diminished.

Yours faithfully,

JOHN M. CROMBIE, M.A., M.D.

BROMPTON, *July 8th*, 1873.

DIRECTIONS FOR MEASUREMENT.

State the size of the head in a line with the middle of the forehead measuring over the hair in its natural position.

"If we could only secure on every occasion adequate rest and support (simply a variety of rest) and apply temperature in its appropriate degree and position, the lecturer went on to state that he had not the slightest doubt that by such simple means alone pain could in every case be overcome. Of course this is not yet nearly possible, nor may it ever be, nevertheless the methods for the application of temperature and support are among the most generally useful of medical inventions. The Water-bed might be quoted as an admirable example where support is obtained with pressure reduced to a minimum, and temperature can be altered as desired. Its necessary high price and the difficulty of keeping up so large a body of water at the required temperature, unfortunately limit its employment. Messrs. Hooper, of Pall Mall, have introduced a modification of their admirable Water-bed, at Dr. Crombie's suggestion, which can be sold at a price within the reach of the poorer classes, and is easier to manage as regards the regulation of temperature. It consists of a water-cushion two feet square, having an aperture in the centre with drainage tube, which can be fitted into an ordinary mattress, thus affording the elastic support and the temperature where it is most essential, while the drainage tube permits the removal of secretions without raising the patient out of bed—an incalculable boon on many occasions to the helpless invalid."—*From Lectures on the Physical Relation of Pain.*